

REMARKS/ARGUMENTS

I. Introduction:

Reconsideration of the rejections set forth in the Office Action dated April 21, 2005 is respectfully requested. Claims 1-24 are currently pending.

II. Rejections under 35 U.S.C. § 103

Claims 1-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0036985 (Jonas et al.) in view of U.S. Patent No. 6,212,240 (Scheibel et al.).

Independent claim 1 requires a method for operating a subscriber unit that includes transmitting data to a central access point during a directed grant slot allocated to the subscriber unit, and monitoring MAP messages broadcast by the central access point to detect acknowledgement of receipt of the data. If no acknowledgment of receipt is indicated by the MAP messages, the data is retransmitted.

Jonas et al. are simply using MAP messages to transmit time interval allocations on the downstream channel. The Examiner has indicated that Jonas does not disclose monitoring MAP messages broadcast by a central access point to detect acknowledgment of receipt of data and also does not disclose retransmitting data if no acknowledgement of receipt is indicated by MAP messages.

However, the Examiner has argued that Scheibel et al. teach these features. It is respectfully submitted that none of the cited art, alone or in combination, teaches or even reasonably suggests monitoring MAP messages broadcast by a central access point to detect acknowledgement of receipt of data that is transmitted during a directed grant slot allocated to a subscriber unit or retransmitting data if no acknowledgement of receipt of data transmitted during the directed grant slot is indicated by the MAP messages.

Scheibel et al. disclose a method and apparatus for conveying data between communication devices. The system uses conventional ARQ protocols to send

acknowledgement messages between communication devices. The acknowledgement message indicates a quantity of the data blocks that were not received and compares this quantity to a threshold. When the quantity is less than the threshold, the data blocks that were not received are retransmitted at a second, usually lower, modulation rate. Scheibel et al. do not use a DOCSIS-based MAC protocol. Instead they use conventional ARQ protocol and associated acknowledgement messages. Network protocols designed from the start for wireless communication often include a mechanism referred to as ARQ that provides for acknowledgement of successfully transmitted information and retransmission where there is no such acknowledgement. ARQ increases the performance of wireless communication networks in challenging channel conditions because the odds of successive transmission are greatly increased if multiple attempts are permitted. Unfortunately, DOCSIS makes no provision for ARQ in its MAC layer design. Furthermore, it is very cumbersome to include ARQ at the physical layer and still take advantage of DOCSIS MAC layer components. Applicants' invention is particularly advantageous in that it adapts ARQ to the DOCSIS MAC layer while making minimal changes to the DOCSIS protocol.

Scheibel et al. do not show or suggest the use of MAP messages to detect acknowledgement of receipt of data transmitted during a directed grant slot. The MAP messages are scheduling messages which are periodically transmitted by the central access point to coordinate the upstream transmission of subscriber units. Applicants' invention modifies the DOCSIS MAC layer protocol to incorporate an automatic retransmission mechanism, which allows DOCSIS to more effectively handle challenging communication channels.

Accordingly claim 1 is believed to be allowable over the cited art because no combination of the cited art reasonably suggests monitoring MAP messages for an acknowledgment of receipt of data transmitted during a directed grant slot and retransmitting the data if no acknowledgement of receipt of data is indicated by the MAP messages.

Claims 2-4 each depend either directly or indirectly from claim 1 and are, therefore, believed to be allowable over the cited art for at least the reasons set forth above with respect to claim 1. Each of these dependent claims recites additional limitations which, when considered in light of claim 1, are believed to further distinguish the claimed invention over the cited art. By

way of example, claim 4 requires that data is stored only if communication of the data is delay tolerant. Scheibel et al. are concerned with the quantity of unreceived data and not whether data is delay tolerant.

Claims 5, 8, 11, 14-16, and 20 recite similar limitations pertaining to monitoring MAP messages for acknowledgement of receipt of data as those recited in claim 1. As such, each of these claims, as well as their respective dependents, are believed to be allowable over the cited art for at least the reasons set forth above.

III. Conclusion:

For the foregoing reasons, Applicants believe that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,



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